DOCUMENT RESUME

ED 163 080 TM 008 182

AUTHOR Hedl, John J., Jr; And Others
TITLE Test Anxiety and Humor Appreciation.
PUB DATE Mar 78
NOTE 18p.; Paper presented at the Annual Meeting of the American Educational Research Association (62nd, Toronto, Ontario, Canada, March 27-31, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Academic Achievement; *Anxiety; Cartoons; Higher Education; *Humor; *Performance Factors; Reactive Behavior; Response Style (Tests); Statistical Analysis; *Stress Variables; Student Attitudes; *Student Reaction; *Testing Problems
IDENTIFIERS State Trait Anxiety Inventory; *Test Anxiety; Test Anxiety Scale

ABSTRACT

The effects of achievement-oriented and neutral instructions on the humor ratings of both testing and non-testing cartoons were assessed for high- and low test-anxious students. The effects of humor in reducing state anxiety were also evaluated. Fifty-two undergraduate students were selected on the basis of their Test Anxiety Scale scores. Both high- and low test-anxious students rated five testing and non-testing related cartoons for funniness under achievement-oriented or under neutral conditions. In the neutral condition, the high test-anxious students rated the cartoons as significantly higher in humor value than their low test-anxious counterparts. In contrast, with achievement-oriented instructions, high and low test-anxious students rated the cartoons as equally funny. These results generally support an optimal arousal model of humor appreciation. Hypothesized relationships between cartoon theme, theme salience, and humor appreciation were not found. Results indicated that the incorporation of humor may have both positive or negative effects, depending on the test-anxiety proneness of the students and their momentary state of anxiety. (Author/JAC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED163080

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Test Anxiety and Humor Appreciation

John J. Hedl, Jr.

The University of Texas Health Science Center at Dallas

Jackie L. Hedl and Donald B. Weaver

The University of Texas at Dallas

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

John J. Hedl, Jr.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (FRIC) AND USERS OF THE ERIC SYSTEM."

TM008 182

Paper presented at the meeting of the American Educational Research Association, Toronto, March 1978.

Abstract

The effects of achievement-oriented and neutral instructions on the humor ratings of both testing and non-testing cartoons were assessed for high- and low test-anxious students. The effects of humor in reducing state anxiety were also evaluated. Fifty-two students were selected on the basis of their TAS scores. Both high- and low test-anxious students rated five testing and non-testing related cartoons for funniness under achievement-oriented or under neutral conditions. In the neutral condition, the high test-anxious students rated the cartoons as significantly higher in humor value than their low test-anxious counterparts. In contrast, with achievement-oriented instructions, high and low test-anxious students rated the cartoons as equally funny. These results generally support an optimal arousal model of humor appreciation. Hypothesized relationships between cartoon theme, theme salience, and humor appreciation were not found. Suggestive evidence was obtained concerning the anxiety-reducing benefits of humor in evaluative, test-like situations.

Test Anxiety and Humor Appreciation[1]

Goldstein and McGhee's (1972) recent and exhaustive survey of humor research indicates that while the last quarter of a century has witnessed a rapid growth of interest in this topic, only a few hundred studies have been conducted. Unfortunately, the effect of humor in school-related situations involving learning and testing remains largely an unexplored area (Ziv, 1976). In educational environments, however, humor is generally viewed as a positive factor in the areas of instruction and evaluation (Terry & Woods, 1975).

Although several studies have shown that humor can increase attention and interest in a topic (Gruner, 1970), comprehension and acceptance of an orally presented message have not been demonstrated to improve when the message includes humor (Markiewicz, 1974). In the lecture situation Kaplan and Pascoe (1977) indicated that immediate comprehension was not facilitated by the use of humorous examples in the lecture. Only the retention of the humorous material was improved upon retesting six weeks later. These few studies suggest that the functions of humor in the initial learning of information are complex, and as yet, not well understood.

The relationship of humor, however, in the reduction of anxiety is more clearly documented in the psychological literature (Dworkin & Efran, 1967; Keith-Spiegel, 1972; Singer, 1968). An individual whose activation state is at a moderate level is best able to enjoy humorous stimuli, whereas individuals at either a low or very high level of activation are at a disadvantage in this respect (Berlyne, 1972). From an education perspective, Smith, Ascough, Ettinger, & Nelson, (1971) showed that highly

anxious students scored significantly higher on a humorous test than on a nonhumorous test. These authors suggested that the inclusion of humor reduced the high anxiety down to a more optimal level enabling them to perform at a level more commsurate with their abilities. Terry and Woods (1975) used a similar interpretation to explain their findings that humor depressed the test performance of third graders and had mixed effects on fifth graders' performance.

In view of the complex relationships between humor, arousal and performance, and the relative lack of research in educational areas, the present study was designed to assess the impact of individual differences in the form of test anxiety proneness on the perception of humor in a simulated testing situation. It was predicated that the perceptions of humorous material should differ according to the individual's level of test anxiety, the salience of a particular cartoon's theme to the immediate situation, and the cartoon content itself. Further, actual levels of state anxiety should be reduced by the exposure to the humorous cartoon materials.

Method

Subjects

Fifty-two students (17 males; 35 females) enrolled in an undergraduate psychology class entitled Research Strategies at the University of Texas at Dallas participated in the experiment. During the first week of the fall semester the 37-item Test Anxiety Scale (TAS) (Sarason, 1972) was administered to all students enrolled in the course. On the basis of a median split (13.5) of the TAS scores, the sample was divided into low (2-13) and high (14-35) test-anxious groups. Students in both the high

and low TAS groups were then randomly assigned to the achievement oriented/ neutral instructions condition. The number of students in each of the four experimental groups were: High TAS/Achievement Orientation = 14; High TAS/Neutral = 10; Low TAS/Achievement Orientation = 15; Low TAS/Neutral = 13.

Development of Humor Stimuli

To test the effects of the instructions variable on the humor ratings, it was necessary first to develop humorous stimuli that were equivalent in "funniness" yet different in thematic content. The authors selected 30 Peanuts cartoons from Schulz (1968, 1970). The thematic content of 15 cartoons was related to how a student might react in a school testing situation. For example, Peppermint Patty is shown looking at an exam she is about to take and remarks:

> An essay test! I'm doomed!
> Why couldn't she have given us a multiple-choice test?
> Or a true or false test?
> I hate it when you have to know what you're writing about.

The remaining 15 cartoons had a variety of themes, none of which were related to testing concerns.

Twenty-three students enrolled in a different psychology class independently rated both the degree of humor and the thematic content of these 30 cartoons. To control for order effects in the humor ratings (Goldstein, Suls & Anthony, 1972), the cartoons were randomly numbered from one to 30 and randomly assigned to serial positions in the cartoon packets for approximately one-half of the pilot students. The remaining students received the same cartoons in the reverse order.

The students rated each cartoon on a five-point Likert type humor

scale (1 = not funny at all; 5 = extremely funny). After all cartoons were rated for their "funniness", these students rated the degree to which the theme of each cartoon depicted the way they might feel before, during, or after taking an examination. A five point scale (1 = not at all; 5 = very strongly) was used. From these initial 30 cartoons, five testing-related and five non-testing related cartoons were selected for statistical comparison (See Table 1).[2]

Insert Table 1 about here

One-way analyses of variance were conducted to evaluate the humor and thematic content ratings. The anova comparing the "funniness" ratings for these 5 testing-related and 5 non-testing related cartoons yielded a nonsignificant F value of .76 indicating that all 10 cartoons were relatively equivalent in degree of "funniness". In contrast, a significant F (9/220) ratio of 9.03 ($p < .05$) was found for the thematic content ratings. To test the differences between the various means, a Newman-Keuls' multiple range test was computed. The results indicated that ratings of the theme for the five test anxiety cartoons were equivalent, that ratings of the theme for the non-test anxiety cartoons were equivalent, and more importantly, that the ratings of the themes for the testing cartoons were significantly higher than for non-testing cartoons. These analysis indicated that the cartoons selected for inclusion in the study were rated as being equivalent in "funniness" yet significantly different in thematic content.

State-Trait Anxiety Inventory

The self-report A-State rating scale from the STAI was used (Spielberger, Gorsuch & Lushene, 1970) to measure state anxiety. The scale measures the level of intensity of the student's feelings of tension, nervousness, worry, and apprehension at a given moment in time. A five-item abbreviated version of this scale was used. Retrospective state instructions were used (i.e., "Indicate how you felt while you were rating the cartoons"). This scale has been shown to have substantial internal consistency reliability and construct validity. (See O'Neil (1977) for a more complete discussion of the scale's psychometric characteristics.)

Experimental Materials

Twenty-page booklets containing a two-part exercise were prepared for all students. The first page of the booklets presented general information concerning the two tasks. The experimental design required two sets of instructions and two tasks as indicated below.

Neutral Orientation Materials. For students in the neutral orientation group, the instructions for Part 1 of the exercise indicated that they would be asked to rate the funniness of 10 Peanuts cartoons. They were also told that there were no right or wrong answers, that we were merely interested in their personal reactions to the various cartoons. In the Part 2 instructions, they were asked to rate an additional 10 jokes (Hedberg, 1963; Used by Hom, 1966) and briefly describe why each joke was funny to them. Part 1 of the booklet contained the 10 Peanuts cartoons; Part 2 contained ten additional jokes.

Achievement-Oriented Materials. The Part 1 instructions for this group were the same. However, the Part 2 instructions (on the same page) were designed

to arouse levels of state anxiety and were stated as follows:

> Part 2 is concerned with predicting your overall performance in this course (Research Strategies). Therefore, you will be asked to answer 10 short-answer questions dealing with statistical and methodological issues in experimental design. Do your work carefully because your score will reflect the grade that you are likely to receive in this course.

These instructions conform to the difficulty and evaluative criteria suggested by Spielberger (1972) for inducing state anxiety into the experimental situation.

Part 1 of the booklet consisted of the 10 cartoons; Part 2 consisted of 10 short-answer questions (e.g., Explain the difference in a one-tailed *t* test and a two-tailed *t* test. Explain why there is a trade-off between internal and external validity in true experiments). Students rated the humor in the cartoons on the same Likert scale used in the pilot study. The order of presentation of the cartoons was randomly determined for each student. The A-State scale immediately followed the cartoons and was completed before the students began Part 2 of the task.

Procedure

Grade sheets, homework grades and midterm exam scores were distributed along with the booklets to all students by the instructor at the beginning of class. The grade sheets were used merely as a means of insuring that students received the correct experimental booklets. Students were asked to put aside their booklets, examine their grade sheets and verify their scores then hand them in to the instructor.

After the students had turned in their grade sheets, the instructor asked the students to complete the task, reading all directions carefully. Students were given approximately 20 minutes to do the task. At the end

of 20 minutes the instructor made sure all students had completed Part 1 of their booklets and were working in Part 2, then asked everyone to turn in their booklets. They were then debriefed and allowed to ask questions about the study.

Results

Humor Ratings

The means and standard deviations of the humor ratings according to cartoon theme are presented in Table 2. The ratings from the five testing cartoons were summed to yield a total score as were the ratings for the five non-testing cartoons. These summated ratings were evaluated in a 2 x 2 x 2 unweighted means analysis of variance for repeated measures for unequal sample sizes (Winer, 1971). The independent variables were level of test anxiety (high vs. low), types of instructions (achievement-oriented vs. neutral), and thematic content of the cartoons (testing vs. non-testing).

Insert Table 2 about here

The results of this analysis yielded a significant disordinal interaction between TAS level and type of instructions ($F(1/48) = 4.25$, $p < .045$). In the neutral instructions condition, a simple main effects test indicated that the high TAS students tended to rate the cartoons as more humorous ($\bar{x} = 15.7$) than the low TAS ($\bar{x} = 13.1$) group ($F(1/43) = 5.21$, $p < .05$). In contrast, the high TAS students rated the cartoons as humorous ($\bar{x} = 14.2$) as the low TAS students ($\bar{x} = 15.1$) in the achievement-oriented condition. Neither main effect for level of TAS nor cartoon theme approached statistical significance. None of the interactions with the theme factor were statistically significant. Hence the data indicate that the effects were essentially identical under each of the theme combinations.

Humor and State Anxiety

The means and standard deviations of the STAI A-State Scale scores are also presented in Table 2. These data were evaluated in a 2 x 2 unweighted means analysis of variance for unequal sample sizes (Winer, 1971). The results indicated that neither the test anxiety level, type of instructions, nor their interaction significantly influenced self-reported measures of state anxiety. Assuming that the achievement-oriented instructions raised anxiety, these data then suggest that the humor experience reduced levels of state anxiety, although the effect is not tested directly.

Discussion

The results of this study are generally supportive of predictions derived from an optimal arousal model of humor appreciation (Godkewitsch, 1972). In the neutral instructions condition, the high-TAS students rated the cartoons as "funnier" than the low-TAS students. Presumably, the general arousal level of these high TAS students was higher and more nearly optimal for their attention to the humor stimuli. Conversely, the habitual arousal level of the low-TAS students was lower leading to less than optimal attention and humor appreciation in a non-stressful situation. In the achievement-oriented stressful condition, the presumed increase in state anxiety was beneficial to the low-TAS students and detrimental to the high-TAS students resulting in overall equivalent humor ratings in this condition. These findings are important since they demonstrate that the incorporation of humor into testing situations may have both positive or negative effects depending upon the test-anxiety proneness of the students and their momentary state of anxiety.

These findings are at variance with Smith, et al.'s (1971) findings that the highly test-anxious students scored significantly greater on a humorous classroom examination than on a nonhumorous test, presumably because the humor reduced the state anxiety of thse students to a more optimal level. Our study suggests that the evaluative situation decreased the level of humor appreciation for these high TAS students to a level slightly below that of the low test-anxious students. Whether this situation would facilitate or debilitate the actual test performance of high test-anxious persons is unanswerable in the present study. Unfortunately, the present study did not include an independent performance measure and Smith et al.'s study did not include a measure of the humor value of his experimental materials.

From an anxiety viewpoint, the present study includes an independent measure of momentary arousal (state anxiety), a rarity from a humor research perspective. Unfortunately, a direct test of the anxiety reduction effects of humor was not possible considering the experimental design. However, if we assume that the experimental instructions were effective in arousing levels of state anxiety at the outset (a reasonable assumption based upon previous research in the area of test anxiety and experimental instructions), then the A-State data assessed at the conclusion of the humor rating period provides limited support for the anxiety reduction hypothesis. This relationship between humor and anxiety still remains to be empirically demonstrated, however.

A rather unexpected result concerned the failure to observe a relationship between salience of the cartoon themes and the various experimental conditions.

Previous research has suggested that both the salience of the humor content to the particular situation and the current motivational level of the student can affect humor appreciation (Goldstein et al., 1972). It was predicted that when an achievement-orientation theme was relevant, students would prefer testing-related humor to other types of thematic content, irrespective of current motivational states. The failure to find any significant relationship may be attributed partially to methodological differences in the studies. In the present study, the cartoon orders were randomly determined for each student. Goldstein et al.'s (1972) methodology required that the students rate the cartoons as theme-groups, counterbalanced to control for order effects. It is quite possible that our randomization of the cartoon themes precluded the development of cognitive sets which enable the students to process the humor stimuli in a more facile and pleasurable way.

The results of the present study suggest that the effects of humor in testing situations are complex and are not well-documented. One might argue that it may be heretical to question the value of humor for instruction and performance testing. Nevertheless, the present report suggests that the effects of humor are not unitary and cautions against the indiscriminate, uncritical use of humor in testing situations. Although humor may serve to enhance the performance of test-anxious students, it may serve to depress the actual test performance of low-test-anxious students (Terry & Woods, 1975; Smith et al., 1971). Until the relationships between anxiety, humor, and academic performance are established empirically, caution should be exercised in the use of humor in academic testing settings.

References

Berlyne, D. E. Humor and its kin. In J. H. Goldstein and P. E. McGhee (Eds.), The psychology of humor. New York: Academic Press, 1972.

Dworkin, E. S., & Efran, J. S. The angered: Their susceptibility to varieties of humor. Journal of Personality and Social Psychology, 1967, 6, 233-236.

Godkewitsch, M. The relationship between arousal potential and funniness of jokes. In J. H. Goldstein and P. E. McGhee (Eds.), The psychology of humor. New York: Academic Press, 1972.

Goldstein, J. H. & McGhee, P. E. (Eds.). The psychology of humor. New York: Academic Press, 1972.

Goldstein, J. H., Suls, J. M., & Anthony, S. Enjoyment of specific types of humor content: Motivation or salience? In J. H. Goldstein and P. E. McGhee (Eds.), The psychology of humor. New York: Academic Press, 1972.

Gruner, C. R. The effect of humor in dull and interesting informative speeches. Central States Speech Journal, 1970, 21, 160-166.

Hedberg, A. Response to humor stimuli as a function of anxiety and a success or failure experience. Unpublished master's thesis, Northern Illinois University, 1963.

Hom, G. L. Threat of shock and anxiety in the perception of humor. Perceptual and Motor Skills, 1966, 23, 535-538.

Kaplan, R. M., & Pascoe, G. C. Humorous lectures and humorous examples: Some effects upon comprehension and retention. Journal of Educational Psychology, 1977, 69, 61-65.

Keith-Spiegel, P. Early conceptions of humor: Varieties and issues. In J. H. Goldstein & P. E. McGhee (Eds.), The psychology of humor. New York: Academic Press, 1972.

Markiewicz, D. Effects of humor on persuasion. Sociometry, 1974, 37, 407-422.

O'Neil, H. F., Jr. Anxiety and learning in computer-based learning environments: An overview. In J. E. Sieber, H. F. O'Neil, Jr., & S. Tobias (Eds.), Anxiety, Learning, and Instruction. Hillsdale, New Jersey: Erlbaum, 1977.

Sarason, I. G. Experimental approaches to test anxiety: Attention and the uses of information. In C. D. Spielberger (Ed.), Anxiety: Current trends in theory and research (Vol. 2). New York: Academic Press, 1972.

Schulz, C. M. Peanuts classics. New York: Holt, Rinehart and Winston, 1970.

Schulz, C. M. Peanuts treasury. New York: Holt, Rinehart and Winston, 1968.

Singer, D. L. Aggression arousal, hostile humor, catharsis. Journal of Personality and Social Psychology, 1968, 8, 1-14.

Smith, R. E., Ascough, J. C., Ettinger, R. F., & Nelson, D. A. Humor, anxiety, and task performance. Journal of Personality and Social Psychology, 1971, 19, 243-246.

Spielberger, C. D. Anxiety as an emotional state. In C. D. Spielberger (Ed.), Anxiety: Current trends in theory and research (Vol. 1). New York: Academic Press, 1972.

Spielberger, C. D., Gorsuch, R. L. & Lushene, R. E., Manual for the State-Trait Anxiety Inventory. Palo Alto, California: Consulting Psychologists Press, 1970.

Terry, R. L., & Woods, M. E., Effects of humor on the test performance of elementary school children. Psychology in the Schools, 1975, 12, 182-185.

Winer, B. J., Statistical principles in experimental design (2nd ed.). New York: McGraw-Hill, 1971.

Ziv, A. Facilitating effects of humor on creativity. Journal of Educational Psychology, 1976, 68, 318-322.

Footnotes

1. Paper presented at the meeting of the American Educational Research Association, Toronto, March 1978. Sincere acknowledgement is given to Ms. Joyce Ruark for typing, editing, and clerical efforts associated with this study.

   Requests for copies should be directed to John J. Hedl, Jr., School of Allied Health Sciences, The University of Texas Health Science Center at Dallas, Dallas, Texas 75235.

2. Copies of the five testing and non-testing cartoons may be obtained from the first author.

Table 1

Humor and Theme Ratings

for Ten Selected Cartoons

(Pilot Study)

Cartoon Theme	Humor Ratings		Theme Ratings	
	Mean	SD	Mean	SD
Testing Theme				
1	3.39	1.12	3.30	1.22
2	3.30	1.06	3.39	1.27
3	3.56	1.08	3.48	1.24
4	3.47	1.27	3.91	1.20
5	3.00	1.13	3.09	1.20
Non-Testing Theme				
6	3.00	1.24	1.87	1.14
7	3.26	1.39	2.17	1.23
8	3.61	1.41	1.96	1.36
9	3.26	1.21	2.22	1.28
10	3.09	1.12	1.91	1.24

Table 2

Means and Standard Deviations of Humor Ratings and STAI A-State Scale Scores

	Humor Ratings		
Experimental Group	Testing Cartoons	Non-Testing Cartoons	STAI A-State Scores
High TAS Level			
Achievement Instructions (n = 14)			
Mean	14.43*	13.93	8.43
SD	4.24	4.18	3.84
Neutral Instructions (n = 10)			
Mean	15.50	15.90	8.30
SD	2.92	3.35	2.83
Low TAS Level			
Achievement Instructions (n = 15)			
Mean	15.33	14.93	9.33
SD	2.38	1.98	4.15
Neutral Instructions (n = 13)			
Mean	13.15	13.07	9.46
SD	4.02	3.28	4.52

* Summated rating of five cartoons